

UF/IFAS ARTIFICIAL INTELLIGENCE SUMMIT

THURSDAY

February

12

9:00 a.m. - 4:30 p.m.

Emerson Alumni Hall

GAINESVILLE, FL



Thank you for joining us at the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) AI Summit to learn about exciting collaborations and application domains for AI, contribute to a shared vision for AI research and education, and help foster a thriving academic community around AI at UF.

<https://go.ufl.edu/ifasaisummit>

AGENDA

8:30 a.m. Check-in, coffee, and snacks

9:00 a.m. **MORNING SESSION: SETTING THE STAGE AND SHARING THE VISION FOR AI IN AGRICULTURE, NATURAL RESOURCES, AND HUMAN SYSTEMS**

Welcome & Opening Remarks - Dr. Robert Gilbert (UF/IFAS Dean for Research and Executive Director of Academic Affairs)

AI and UF/IFAS Mission - Dr. Scott Angle (UF/IFAS Senior Vice President for Agriculture and Natural Resources)

9:15 a.m. **UF Vision for AI** - Dr. Joseph Glover (Provost and Senior Vice President for Academic Affairs)

9:30 a.m. **Opportunities and Support for Transdisciplinary AI Research** - Dr. Alina Zare (Director of UF Artificial Intelligence and Informatics Research Institute)

9:50 a.m. **UF/IFAS Center for Applied AI in Agriculture** - Dr. Jack Rechcigl (Director of the UF/IFAS Gulf Coast Research and Education Center)

10:10 a.m. **BREAK**

10:30 a.m. **Keynote talk:** Towards Autonomous and Intelligent Crop Management Using AI and Robotics (Dr. Yiannis Ampatzidis, Professor - Agricultural & Biological Engineering Department /Southwest Florida REC)

10:50 a.m. **Keynote talk:** Empowering Plant Phenomics with AI to Advance Crop Improvement (Dr. Charlie Li, Professor - Agricultural & Biological Engineering Department)

11:10 a.m. **Keynote talk:** Frontiers in GeoAI and Earth Observation Modeling (Dr. Sabine Grunwald, Professor - Soil, Water, & Ecosystem Sciences Department)

MORNING SESSION CONTINUED

11:30 a.m.

Lightning Talk Session One

Moderators: Dr. Ziwen Yu (Assistant Professor - Agricultural & Biological Engineering Department), Dr. Xiaoya Zhang (Assistant Professor - Family, Youth, & Community Sciences Department)

- **Leveraging AI-Derived Digital Phenotypes for Precision Dairy Farming** (Dr. Haipeng Yu, Assistant Professor - Animal Sciences Department)
- **Applying Machine Learning to Understand Animal Behavior** (Dr. Daniel Hofstetter, Assistant Professor - Agricultural & Biological Engineering Department)
- **Semantic Scene Reconstruction for Agricultural Production and Research** (Dr. Henry Medeiros, Associate Professor - Agricultural & Biological Engineering Department)
- **Digital Twins From Simulation to Field Deployment for Agricultural Automation** (Dr. Dana Choi, Assistant Professor - Gulf Coast REC/Agricultural & Biological Engineering Department)
- **AI Tools to Study Pepper Plant Architecture** (Dr. Bala Rathinasabapathi, Professor - Horticultural Sciences Department)
- **Empowering Youth Mental Health Interventions with Machine Learning** (Dr. Xiaoya Zhang, Assistant Professor - Family, Youth, & Community Sciences Department)

12:00 p.m.

AFTERNOON SESSION: GROWING OUR AI FOOTPRINT IN RESEARCH AND BEYOND

Lunch & Poster Presentations

Moderators: Dr. Raquel Dias (Assistant Professor - Microbiology & Cell Science Department) and Dr. Diana Taft (Assistant Professor - Food Science & Human Nutrition Department)

- Enjoy lunch while exploring cutting-edge research posters and networking with peers

1:00 p.m.

Translating AI Research into Commercial Impact

Explore pathways from academic innovation to market-ready solutions (Moderator: Dr. Kati Migliaccio, Professor and Dean of UF College of Agricultural & Life Sciences)

- Panelists: Bob Pitzer (Harvest CROO), Matt Donovan (AgIntel), Sarah Martello (Transparency Wise), Kyle Norton (Everglades Equipment Group), Scott Berden (U.S. Sugar)

1:45 p.m.

Navigating the AI Grant Funding Landscape

Insights into funding opportunities and strategies for successful proposals (Moderator: Dr. Damian Adams, UF/IFAS Professor and Associate Dean for Research)

- Speaker: Dr. Irene Cooke (UF Assistant Vice President for Research and Interim Director of Strategic Research Development)

2:15 p.m.

BREAK

AGENDA cont.

AFTERNOON SESSION CONTINUED

2:30 p.m.

Lightning Talk Session Two

Moderators: Dr. Kevin Wang (Assistant Professor - Gulf Coast REC/Agricultural & Biological Engineering Department), Dr. Tie Liu (Associate Professor - Horticultural Sciences Department)

- **Hybrid AI Architectures for Integrative, Biologically Informed Predictions** (Dr. Raquel Dias, Assistant Professor - Microbiology & Cell Science Department)
- **Developing Trustworthy AI for Florida Agriculture** (Dr. Nikos Tziolas, Assistant Professor - Southwest Florida REC/Soil, Water, & Ecosystem Sciences Department)
- **Strawberry Yield Prediction System Using Color Imaging and Artificial Intelligence** (Dr. Won Suk (Daniel) Lee, Professor - Agricultural & Biological Engineering Department)
- **GeoAI for Bridging Ecosystem Service Research Gaps** (Dr. Chang Zhao, Assistant Professor - Agronomy Department)
- **DeepFlavor: Integrating Computer Vision and Sensory Analysis for Flavor Improvements** (Dr. Felipe Ferrao, Resident Assistant Scientist - Horticultural Sciences Department)
- **AI Enabled Predictive Breeding: Sorghum Case Study** (Dr. Carlos (Charlie) Messina, Professor - Horticultural Sciences Department)
- **AI-Powered Plant Disease Management: From Early Detection to Decision Support** (Dr. Katia Viana Xavier, Assistant Professor - Everglades REC/Plant Pathology Department)
- **The Potential for Cross-view Generative AI to Generalize Airborne Wildlife Monitoring** (Dr. Ethan White, Professor - Wildlife Ecology & Conservation Department)
- **AI in Urban Landscaping** (Dr. Ryan Klein, Assistant Professor - School of Forest, Fisheries, & Geomatics Sciences)
- **AI Irrigation, Soils, and Nutrient Prescription Maps for Potato Production** (Dr. Lincoln Zotarelli, Professor - Horticultural Sciences Department)

3:30 p.m.

UF/IFAS AI External Advisory Board – Strategic Insights and Perspectives from Industry and Academic Leaders on Advancing UF/IFAS AI

Moderator: Dr. Robert Gilbert (UF/IFAS Dean for Research and Executive Director of Academic Affairs)

- Panelists: Dr. George Kantor (Research Professor, Carnegie Mellon University), Dr. Jawoo Koo (Deputy Director - CGIAR International Food Policy Research Institute) Dr. Diego Luzuriaga (Vice President of R&D - Florida Crystals Corp.), Dr. Alina Zare (Director - UF Artificial Intelligence and Informatics Research Institute)

4:15 p.m.

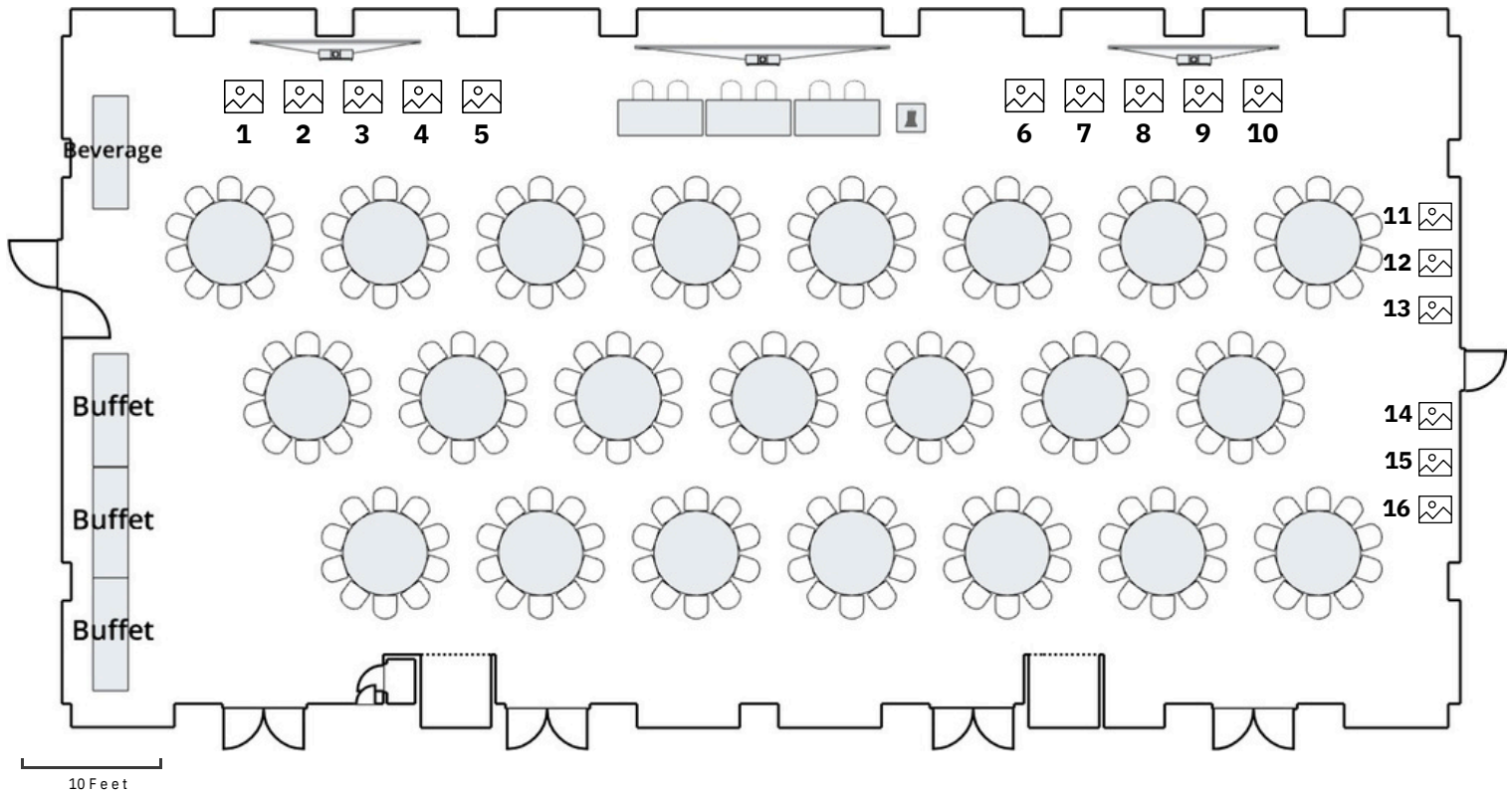
Closing Remarks - Dr. Robert Gilbert (UF/IFAS Dean for Research and Executive Director of Academic Affairs)

4:30 p.m.

END OF SESSIONS

BALLROOM

Posters 1-16



POSTER INFORMATION

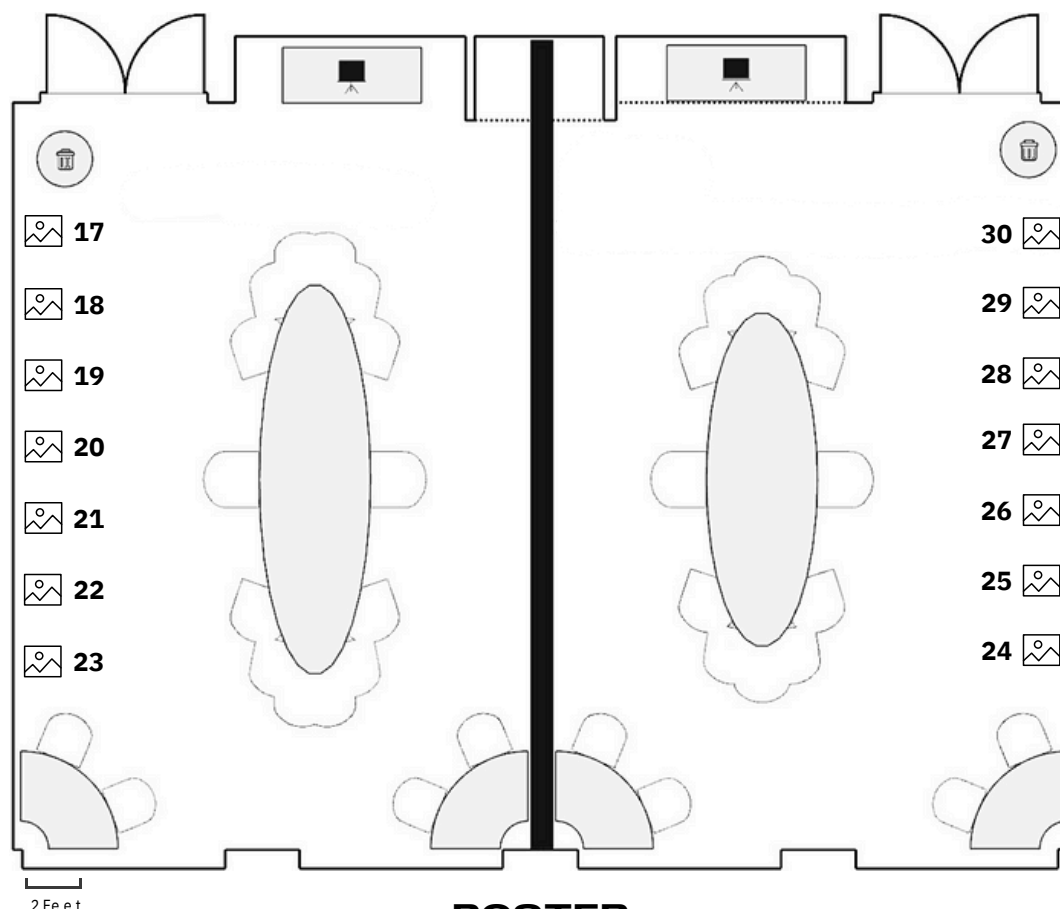
- | | | |
|-----|---------------------------|---|
| 1. | Gustavo C. Visentini | VISTAA - Virtual Intelligent Simulation Tool for Agriculture Advisor |
| 2. | Hope Thompson | Trauma - Informed AI for Veteran Healing and Mental Wellness |
| 3. | Namrata Ghimire | Deep Learning and Explainable AI for Mapping Wildfire Susceptibility |
| 4. | Mair Edwards | Evolving Hemicellulose-Degrading Enzymes through AI-Mediated Design |
| 5. | Zijing Huang | From Fruit Stages to Weekly Yield: A Vision-Weather Multi-Modal Forecasting |
| 6. | Zahra Khademi | Multi Object Tracking and Segmentation for Precision Agriculture |
| 7. | Kyle Kalarchian | Drone-Based Computer Vision Monitoring for Strawberry Yield |
| 8. | Hanna I. de Jesus | AI and Data Science to Determine Blueberry Leaf Nitrogen Sufficiency |
| 9. | Md Zohurul Kadir Roni | Machine Vision for Evaluating Flower Thinning Effects on Blueberry |
| 10. | Jiayi Song | Mapping Invasive Opuntia Stricta (Prickly Pear Cactus) using Explainable Machine Learning |
| 11. | Saba Shaghaghi Khajehdehi | Predicting Nutrient Dynamics in a Large Florida Watershed Using AI |
| 12. | Perseveranca Mungofa | Field-Ready Deep Learning Segmentation of Digital Soil Core Images |
| 13. | Woojung Sin | Monocular 6D Pose Estimation for Robotic Strawberry Harvesting |
| 14. | Harsh Khanna | Predicting Citrus Greening Protein Interactions with AlphFold3 Multi-Metrics |
| 15. | Angelo L De Castro | Multimodal Integration for Postpartum Disease Prediction in Dairy Cows |
| 16. | Zhou Tang | Can 3D Point Clouds Improve Body Condition Scoring in Dairy Cattle? |

POSTER PRESENTATION

LOCATIONS

CONFERENCE ROOM 207/208

Posters 17-30



POSTER INFORMATION

- | | | |
|------------|-----------------------------|--|
| 17. | Shubham Singh | Automated Detection of Tomato Flowers and Fruits Using Computer Vision |
| 18. | William Olson | AI-Based Detection of Invasive Water Hyacinth in Drone Imagery |
| 19. | Kalara Kithmini Dissanayake | Artificial intelligence-Driven Diagnosis of Plant Nutrient Deficiencies |
| 20. | Uchechukwu Ilodibe | XAI and Edge Inference for Strawberry Pest Symptom Identification |
| 21. | Daniel Petti | PlantSAM: An Efficient Vision-Language Foundation Model for Real-Time Plant Segmentation |
| 22. | Trishna Tiwari | AlphaFold3 Provides Insights into Host-Pathogen Protein Interactions |
| 23. | Rui-Feng Wang | JassidNet: A Quantization-Aware AI Framework for Field Phenotyping |
| 24. | Chenjiao Tan | Cotton Boll Segmentation from Synthetic to Real-World Images |
| 25. | Ioannis Gallios | Ethical and Fine-Tuned Federated Framework for Farm-Scale Intelligence |
| 26. | Salvador Cuadros | Toward Hybrid Mechanistic Machine Learning Crop Modeling |
| 27. | Ellen Garcia | AI-Enabled Multi-Omics Analysis of Drought Response in Lettuce |
| 28. | Jin Wang | Transfer Learning for Dairy Cow Body Weight Prediction on Small Farms |
| 29. | Hugo Rodrigues | Soil-Spectral Modeling Using the Deep Learning Autoencoder and Machine Learning Random Forest Algorithm |
| 30. | Jade Hua | Putting Back the Coffee into Soil — Modeling of Soil Health Boosting Effects Using AI and Proximal Soil Sensing Technology |

NOTES



NOTES